What is claimed is:

1. A non-aqueous electrolyte secondary battery comprising:

a battery device having a positive electrode having a collector, on which a positive electrode active material layer containing a positive electrode material is formed, a negative electrode, and a non-aqueous electrolyte layer, the battery device being sealed in a film-state packaging member,

wherein concentration in mass ratio of a free acid in the electrolyte layer is 60 ppm and less.

2. A non-aqueous electrolyte secondary battery according to claim 1, wherein a metal foil laminate case or a laminated film obtained by coating metal foil with a resin and having a structure of packaging resin layer/metal film/sealant layer is used.

3. A non-aqueous electrolyte secondary battery according to claim 2, wherein the positive electrode active material is a composite oxide $LiMO_2$ (where, M is at least one material selected from Co, Ni, and Mn) made of a lithium and a transition metal.

4. A non-aqueous electrolyte secondary battery according to claim 3, wherein the composite oxide of a lithium and a transition metal is at least one material selected from $LiCoO_2$, $LixCo_{1-y}AlyO_2$ (where $0.05 \leq x \leq 1.10$ and $0.01 \leq y \leq 0.10$), $LiNiO_2$, $LiNiyCo_{1-y}O_2$ (where $0 < y < 1$), $LxNiyM1\text{-}yO_2$

(where M denotes at least one of transition metals, B, Al, Ga, and In, $0.05 \leq x \leq 1.10$ and $0.7 \leq y \leq 1.0$), and $LiMn_2O_4$.

5. A non-aqueous electrolyte secondary battery according to claim 4, wherein the positive electrode active material is $LiCoO_2$.

6. A non-aqueous electrolyte secondary battery according to claim 1, wherein the electrolyte is made of a lithium salt and a polymer compound, in which the lithium salt is dissolved or mixed, and

one or more polymer compounds selected from ether-based polymers such as poly(ethylene oxide) and a crosslinked of the poly(ethylene oxide), poly(methacrylate) ester polymer, acrylate polymer, and fluorine polymer such as poly(vinylidene fluoride) and poly(vinylidene fluoride-co-hexafluoropropylene) is/are used.

7. A non-aqueous electrolyte secondary battery according to claim 1, wherein the electrolyte layer is made of a lithium salt, a non-aqueous solution, and a polymer material, and at least one of $LiPF_6$, $LiBF_4$, $LiAsF_6$, $LiClO_4$, $LiCF_3SO_3$, $Li(CF_3SO_2)_2N$, $LiC_4F_9SO_3$, LiCl, and LiBr is mixed as a lithium salt.

8. A non-aqueous electrolyte secondary battery comprising:

a positive electrode having a positive electrode collector, on which a positive electrode active material layer containing a positive electrode

material is formed, a negative electrode having a negative electrode collector, on which a negative electrode active material layer is formed, and a film-state case as a packaging member,

wherein average particle diameter of the positive electrode active material lies in a range from 10 to 22 μm.

9. A non-aqueous electrolyte secondary battery according to claim 8, wherein the positive electrode active material has minimum particle diameter of 5 μm or larger, maximum particle diameter of 50 μm and less, and specific surface area of 0.25 m^2/g and less.

10. A non-aqueous electrolyte secondary battery according to claim 8, wherein the packaging member is a laminated film obtained by coating metal foil with a resin, a polymer film, or a metal film.

11. A non-aqueous electrolyte secondary battery according to claim 8, wherein the positive electrode active material is a lithium-transition metal complex oxide $LiMO_2$ (where, M is at least one material selected from Co, Ni, and Mn).

12. A non-aqueous electrolyte secondary battery according to claim 11, wherein the complex oxide of the lithium and the transition metal is at least one material selected from $LiCoO_2$, $LixCo_{1-y}AlyO_2$ (where $0.05 \leq x \leq 1.10$ and $0.01 \leq y \leq 0.10$), $LiNiO_2$, $LiNiyCo_{1-y}O_2$ (where $0 < y < 1$),

$LxNiyM_{1-y}O_2$ (where M denotes at least one of transition metals, B, Al, Ga, and In, $0.05 \leq x \leq 1.10$ and $0.7 \leq y \leq 1.0$), and $LiMn_2O_4$.

13. A non-aqueous electrolyte secondary battery according to claim 12, wherein the positive electrode active material is $LiCoO_2$.

14. A non-aqueous electrolyte secondary battery according to claim 8, wherein the electrolyte is made of a lithium salt and a polymer compound, in which the lithium salt is dissolved or mixed, and

one or more polymer compounds selected from ether-based polymers such as poly(ethylene oxide) and a crosslinked of the poly(ethylene oxide), poly(methacrylate) ester polymer, acrylate polymer, and fluorine polymer such as poly(vinylidene fluoride) and poly(vinylidene fluoride-co-hexafluoropropylene) is/are used.

15. A non-aqueous electrolyte secondary battery comprising:

a positive electrode having a positive electrode collector, on which a positive electrode active material layer containing a positive electrode material is formed, a negative electrode having a negative electrode collector, on which a negative electrode active material layer is formed, and a film-state case as a packaging member,

wherein the positive electrode active material layer contains 0.15 percent by weight of carbonate compound and less.

16. A non-aqueous electrolyte secondary battery according to claim 15, wherein moisture contained in the positive electrode active material is 300 ppm and less.

17. A non-aqueous electrolyte secondary battery according to claim 15, wherein the positive electrode active material is a complex oxide $LiMO_2$ (where, M is at least one material selected from Co, Ni, and Mn) made of a lithium and a transition metal.

18. A non-aqueous electrolyte secondary battery according to claim 15, wherein the carbonate contained in the positive electrode active material is $LiCoO_3$.

19. A non-aqueous electrolyte secondary battery according to claim 17, wherein the complex oxide of a lithium and a transition metal is at least one material selected from $LiCoO_2$, $LixCo_{1-y}AlyO_2$ (where $0.05 \leq x \leq 1.10$ and $0.01 \leq y \leq 0.10$), $LiNiO_2$, $LiNiyCo_{1-y}O_2$ (where $0 < y < 1$), $LixNiyM_{1-y}O_2$ (where M denotes at least one of a transition metal, B, Al, Ga, and In, $0.05 \leq x \leq 1.10$ and $0.7 \leq y \leq 1.0$), and $LiMn_2O_4$.

20. A non-aqueous electrolyte secondary battery according to claim 15, wherein the positive electrode active material is $LiCoO_2$.

21. A non-aqueous electrolyte secondary battery according to claim 15, wherein the packaging member is a aluminum laminate pack obtained by

coating aluminum with a resin.

22. A non-aqueous electrolyte secondary battery according to claim 15, wherein the electrolyte is made of a lithium salt and a polymer compound in which the lithium salt is dissolved, and

one or more polymer compounds selected from ether-based polymers such as poly(ethylene oxide) and a crosslinked of the poly(ethylene oxide), poly(methacrylate) ester polymer, acrylate polymer, and fluorine polymer such as poly(vinylidene fluoride) and poly(vinylidene fluoride-co-hexafluoropropylene) is/are used.